Lighter Than Air Solar International, LLC
1608 Palmales Ct.
Las Vegas, NV 89128
Attn: Robert K. Ellingwood, President
cambotllc@earthlink.net

Docket Management System
U.S. Department of Transportation
Room PL401
400 Seventh Street, SW
Washington, D.C. 20590-0001

**Re: Docket No. FAA 2003-14715**

We appreciate the opportunity to comment upon the "Noise Limitations for Aircraft Operations in the Vicinity of Grand Canyon National Park; Proposed Rule" (the "SNPR") noticed in the Federal Register on March 24, 2003.

## A. Introduction and Background.

Our company would like to propose that Appendix A to Part 93, which presently defines "quiet technology aircraft" only in terms of "helicopters" and "propeller-driven airplanes" be expanded. To be inclusive of future developments in aviation, we feel that any quiet technology designation should be flexible enough to accommodate aircraft other than helicopters and propeller-driven airplanes. We would assert that this extended definition is in line with the Congressional mandate to encourage the development and use of new technology and alternative aircraft that may prove to be quieter and more environmentally friendly than the types of aircraft now operated at the Grand Canyon National Park ("GCNP").

One such type of aircraft is the airship, presently defined in Part 1 as "an engine-driven lighter-than-air aircraft that can be steered." Due to their unique flight characteristics and neutral buoyancy, airships can be propelled effectively and efficiently with much smaller and quieter engines than heavier-than-air helicopters and airplanes. These qualities make the airship an ideal platform for future air tourism, and a natural solution to the Congressional mandate

Although we are aware of no currently operating airship that is capable of conducting viable air tour operations at the GCNP, it is only a matter of time before such an airship appears on the market. Several companies, including American Blimp Corporation and The Lightship Group, presently operate airships in the United States. We are further informed and believe that several companies, including Zeppelin of Germany, have plans to introduce transport-category airships into the U.S. market, and that Zeppelin may have already filed an application for type certification of a transport-category airship with the FAA. If an airship can perform more quietly than a conventional helicopter or airplane, its operator should be given every opportunity to

access the GCNP airspace, hence our desire to expand the proposed definition of "quiet technology."

The FAA has recognized the imminent future role of airships in air commerce. Recently, the FAA convened the Part 125/135 Aviation Rulemaking Committee (the "ARC"). Meetings were held from June 10-12, 2003, with additional meetings scheduled for August 19-21, 2003 and November 18-20, 2003. The FAA appointed several individuals, including representatives of this company, to serve on the Airships Working Group. The Airships Working Group is tasked with developing and recommending definitions, applicability, safety and maintenance standards for airship operations. Information regarding the ARC, and the Airships Working Group, can be found at http://www1.faa.gov/avr/arm/part135/index.cfm and http://ksn-team.faa.gov/afs-200/nrs/135Frac/135ARC/ (password required). Air tourism will be a significant aspect of airship operations, and likely will receive attention from the Airships Working Group.

In the interest of harmonization, the FAA should mesh its ongoing review and overhaul of the operational requirements for airships with this corresponding opportunity to encourage the use of airships at the GCNP – a role for which airships are uniquely suited. With their naturally quieter operation, airships could provide the single best answer to the "substantial restoration of natural quiet" at GCNP, as mandated by the National Parks Overflight Act of 1987. We simply ask that the FAA afford airship operators the same opportunity as heavier-than-air operators by enacting a more flexible and inclusive definition of quiet technology aircraft.

**B. <u>Proposed Amendment(s) to Appendix A</u>.**

We would recommend that paragraphs 1.C. and 1.D. of the proposed Appendix A be amended to include airships.[1] This could be accomplished either by adding the word "airships" as appropriate, or by replacing the word "airplane" with the more flexible and inclusive term "aircraft other than helicopters." As an example, the proposed paragraph 1.C. could be amended to read as follows (amendments in *italics*):

> "C. For propeller-driven airplanes *and/or airships* with a measured flyover noise level obtained in accordance with the measurement procedures prescribed in Appendix F of 14 CFR part 36 without the performance correction defined in Sec. F36.201(c), the limit is 69 dB for airplanes *and/or airships* having two or fewer passenger seats, increasing at 3 dB per doubling of the number of passenger seats for airplanes *and/or airships* having three or more passenger seats. The limit at number of passenger seats of three or more can be calculated by the formula . . . ."

[1] Airships are propeller-driven, like the airplanes referenced in the present version of paragraphs 1.C. and 1.D.

Similarly, the proposed paragraph 1.D. could be amended to read as follows (amendments in *italics*):[2]

> "In the event that a flyover noise level is not available in accordance with Appendix F of 14 CFR part 36, the noise limit for propeller-driven airplanes *and/or airships* with a takeoff noise level obtained in accordance with the measurement procedures prescribed in Appendix G is 74 dB for airplanes *and/or airships* having two or fewer passenger seats, increasing at 3 dB per doubling of the number of passenger seats for airplanes *and/or airships* having three or more passenger seats. The limit at number of passenger seats of three or more can be calculated by the formula . . . ."

To the extent Part 36 is not directly applicable to airships, operators could rely on the last sentence of the first paragraph of Appendix A, which states: "Where no certificated noise level is available, the Administrator may approve an alternative measurement procedure." In our view, the specific form of the amendment is less important than making clear that airships are also able to compete for "quiet technology aircraft" status and the associated incentives that will flow from such a designation.

The proposed amendment would recognize airships as a viable "quiet technology aircraft" and avoid any potential for their exclusion by omission, would encourage additional innovation in quiet technology and aircraft design, and would foster competition among an expanded class of aircraft types. These results are all consistent with the goal of reducing noise levels at GCNP. The proposed amendment would not prejudice any existing or future operator, and the administrative cost of implementing the amendment would be negligible.

Our company would appreciate any opportunity to expand upon the issues presented in this paper, and to provide additional information that would assist the FAA and this group in its rulemaking recommendations and decisions.

### C. **Responses re "Potential Further Action"**.

In the SNPR, the FAA requests specific comments concerning the implementation of quiet technology and poses six (6) numbered questions at pages 14287-14288. The questions, and our responses, are as follows.

1. How reasonable is the noise efficiency approach (larger aircraft with more passenger seats are allowed to generate proportionally more noise) to define quiet technology and how appropriate is the use of certificated noise level as the basis?

[2] To our knowledge, all tourism-class airships now operating were built and certificated after December 22, 1988. As a result, most airships of this type will likely fall under the requirements of paragraph 1.D.

(a) The Noise Efficiency Approach.

Any effort to reduce noise levels at the GCNP, and to incentivize operators to develop both the quieter technology and the innovative aircraft designs that will lead to reduced noise output, should be commended. We believe, however, that a sliding scale or "noise efficiency" approach will only encourage operators to do the bare minimum necessary to qualify as "quiet technology aircraft," which could include operating ever larger (and noisier) aircraft to take full advantage of the extra decibels offered under the "noise efficiency" formula. Even if an aggregate cap on the total number of flights and/or passengers is enacted to ensure no significant increase in the overall noise level at the GCNP, the spectacle of a handful of large airplanes and helicopters making periodic, noisy flights over the GCNP (and perhaps through flight corridors heretofore unavailable to air tour operators) is unlikely to sit well with conservationists or the sponsors of the National Parks Air Tour Management Act of 2000.

Our company would therefore prefer to see an absolute approach to noise, with no "efficiency" adjustment for the number of passengers carried by an aircraft. An 82dB noise from a helicopter carrying two passengers is the same as an 82dB noise from a helicopter carrying four passengers, and has the same adverse impact on visitors to the GCNP and the natural habitat. Nonetheless, under the proposed criteria the first helicopter would be phased-out entirely (or at least not incentivized to continue operating), while the second helicopter would be encouraged to operate and would likely operate more frequently. None of this would result in an overall reduction in noise levels. We would propose maintaining the noise levels set forth in paragraphs 1.A., 1.B., 1.C. and 1.D., respectively, while deleting the "efficiency bonus" for aircraft carrying larger numbers of passengers.

(b) Certificated Noise Levels.

We have no comment on this issue at this time.

2. <u>What provisions should be made for changes in technology that result in source noise reduction and/or increased noise efficient aircraft designs?</u>

Expanding the definition of "quiet technology aircraft" to include airships is one reasonable approach for accommodating future innovations in both noise reduction technology and noise efficient aircraft designs (which would certainly include airships, which may prove to be the most noise efficient "aircraft designs" for air tourism). By narrowing the field to "helicopters" and "propeller-driven aircraft," the proposed Appendix A to Part 93 could arguably foreclose (or at least render more difficult) any participation by airships, and thereby discourage the development of a promising "quiet technology" industry. Addressing this issue at a future date could subject airship operators to potentially years of hearings and delay before adequate quiet technology measures are enacted to accommodate airships.

Another reasoned approach would be to allow the FAA some flexibility to make additional and more refined distinctions among "quiet technology aircraft" in response to future technological innovations. Specifically, this flexibility should allow the FAA to incentivize the quietest subset of the "quiet technology aircraft" category, in the event that some operators are able to operate at noise levels significantly below the other operators in that category. The FAA should not be locked into a rule requiring it to incentivize one "quiet technology aircraft" operator in exactly same manner (or even substantially the same manner) as another "quiet technology aircraft" operator, where pronounced differences in operating noise levels exist between those operators. As it presently stands, an entity operating an airplane at 69 dB will be treated no differently than an entity operating an airship at 60 dB, for example. It would be prudent for the FAA to maintain some flexibility to further distinguish among, and refine its treatment of, the various operators of "quiet technology aircraft."

The FAA could establish an objective framework for distinguishing between quiet technology operators based on how far below the applicable maximum decibel level they are able to operate. An operator within two decibels below the maximum could be a "Category 1" operator; an operator within three to five decibels below the maximum could be a "Category 2" operator; an operator within six to eight decibels below the maximum could be a "Category 3" operator; and so on as necessary. Operators could then be ranked and prioritized based on their category ranking both (i) within their specific type of "quiet technology aircraft" (i.e., propeller-driven airplanes measured under Appendix G to Part 36, as described in paragraph 1.D. to the proposed Appendix A to part 93), and (ii) against other types of "quiet technology aircraft" (i.e., comparing a propeller-driven airplane to a helicopter).

The FAA would thus have a built-in system to accommodate, and reward, future innovators who are able to operate much more quietly than their counterparts. Instead of a simple threshold for quiet technology with no further gradations, the FAA could implement a sliding scale allowing it to rank, prioritize and incentivize different levels of quiet technology as they arise, based on a well-defined formula, and putting operators on notice that significantly exceeding the minimum noise limit threshold could be beneficial.

3. <u>What economic and operational incentives should be considered in order to achieve the transition to quieter aircraft and how should the quiet technology designation be used in the establishment of the incentives?</u>

Incentives should be directly related to the level of noise reduction, meaning that most, if not all, of the incentives should be awarded to the operators employing "quiet technology aircraft." Any other criteria would fail to encourage the implementation of quiet technology. If maximum noise reduction is to be achieved, only the quietest aircraft operators must be rewarded.

Incentives could include the following, which should be made available *only* to operators of "quiet technology aircraft":

- Exemption from flight allocations that apply to other air tour operators[3] and/or priority over other air tour operators (some form of priority would be essential in the event that the FAA determines that the cumulative impact of an exemption from flight allocations for "quietest category" operators would increase the overall level of noise at the Grand Canyon, meaning that the aggregate number of flights will be fixed and allocations must be prioritized based on the operator's noise level);

- Additional flight corridors[4] and/or lower flight elevations;

- No flight limits, other than those limits consistent with the safe operation of the aircraft and any applicable provisions of the FAR;

- Exemption from, or reduction of, curfews;

- Additional departure points made available to operators whose aircraft can safely operate from such departure points;

- Waiving overflight fees and park admission fees for passengers; and

- Federal, state and/or local tax incentives for the quietest operators.

The group of "quiet technology aircraft" operators at any given time should logically be the smallest, most exclusive category of operators, meaning that even if the foregoing incentives are granted (including, but not limited to, incentives leading to an overall increase in the number of flights by those operators) the overall level of noise at the GCNP should be reduced as existing operators of noisier technology are phased out or bought out by quieter operators. If properly implemented, the cumulative impact of such operations should reduce total noise levels at the GCNP.

---

[3] See National Parks Air Tour Management Act of 2000, Section 804(c):

"(c) Operational Caps. Commercial air tour operations by any fixed-wing or helicopter aircraft that employs quiet aircraft technology and that replaces an existing aircraft shall not be subject to the operational flight allocations that apply to other commercial air tour operations of the Grand Canyon, provided that the cumulative impact of such operations does not increase noise at the Grand Canyon."

[4] See National Parks Air Tour Management Act of 2000, Section 804(b):

"(b) Routes or Corridors.--In consultation with the Director and the advisory group established under section 805, the Administrator shall establish, by rule, routes or corridors for commercial air tour operations (as defined in section 40126(e)(4) of title 49, United States Code) by fixed-wing and helicopter aircraft that employ quiet aircraft technology for--

(1) tours of the Grand Canyon originating in Clark County, Nevada; and

(2) "local loop" tours originating at the Grand Canyon National Park Airport, in Tusayan, Arizona,

provided that such routes or corridors can be located in areas that will not negatively impact the substantial restoration of natural quiet, tribal lands, or safety."

As discussed above, the FAA should also consider a hierarchy of incentives *within* the "quiet technology aircraft" category, in the event that some operators are able to operate at noise levels well below the other operators in that category. This will allow the FAA additional flexibility to encourage further noise reduction, without the cost and delay attendant with a future notice of proposed rulemaking required to amend and further refine the existing "quiet technology aircraft" definitions in Appendix A to Part 93.

4. Should incentives include a "flexible" cap that would permit increasing operations of aircraft based upon the acquisition of leading edge noise efficient technology by operators?

To the extent that those operators acquiring leading edge noise efficient technology (i.e., "quiet technology aircraft" operators) are not exempted from flight allocations altogether, a flexible cap permitting those operators to increase their operations would be the next logical step. If the FAA determines that an aggregate cap on total flights should be maintained, then allocations should be made available to the "quiet technology aircraft" operators by transferring existing allocations away from the noisiest operators to the "quiet technology aircraft" operators on a *pro rata* basis.

5. Should growth be tied to an incentive system for existing operators to convert their fleet to quiet technology?

Yes. The focus should be on rewarding operators who invest in the quietest technologies to expand their operations (i.e., obtain increased flight allocations) . . Any system designed to encourage competition and the concomitant development of quiet technology should be based on noise level alone, and not on seniority, size or some other less relevant criterion.

The difficult question is how to implement that system in a fluid, changing environment. One solution would be for the FAA to periodically review and evaluate the existing allocations at the GCNP, and transfer allocations from the noisiest operators to the quietest operators. Over time, the transfer of allocations would reward the quietest operators and cause the noisier operators to have fewer business opportunities within the GCNP This "phase out" process would be gradual, allowing existing operators who have become obsolete to wind-down their affairs and perhaps recognize some value through the transfer of their licenses to quieter operators desiring to expand their operations in advance of the next periodic review. What percentage of the overall allocation should remain available to "old technology" operators, and for how long, is another issue that must be resolved. The process would have to allow for some flexibility on the part of the FAA, as it is difficult to envision an objective formula that could account for all future innovations in quiet technology and/or aircraft design, and the manner and timing in which those innovations will come to market.

6. What operational limitations (phase-out, expanded curfews, noise budgets, quota system, etc.) should be considered and how should the quiet technology designation be used in the setting of the limitations?

Our response to this question is set forth generally in our responses to Questions 2, 3, 4 and 5, above.

**D. Conclusion**.

Congressional intent to incentivize and reward "quiet technology" operators at the GCNP can be ascertained from Section 804 of the National Parks Air Tour Management Act of 2000. Any such incentives will be based upon the definitions set forth in the proposed Appendix A to Part 93 that is the subject of this SNPR. Accordingly, it is imperative that those definitions are inclusive enough to accommodate not only quiet technology helicopters and airplanes, but also other potential forms of quiet aviation technology, including airships. We urge the FAA to amend paragraphs 1.C and 1.D to include aviation options of the future, including airships.

Looking beyond categorization to implementation, we believe it is crucial to incentivize future innovations in both quiet technology and aircraft design by rewarding only the quietest operators. Incentivizing only the quietest operators will gradually reduce the overall level of noise at the GCNP, while increasing competition among the operators to implement ever-quieter technology, to the benefit of the public and the GCNP. We look forward to further opportunities to comment upon these incentives as they become the subject of future notices of proposed rulemaking.

Thank you again for the opportunity to comment upon the SNPR. We welcome any inquiries, and any opportunity to offer additional commentary.